

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

BID OPENING DATE

A new bid opening date and time of **19 Dec 2002 at 1400 hours** is hereby established.

TECHNICAL SPECIFICATIONS

Section 02466 DRILLED FOUNDATION CAISSONS (PIERS) is revised and reissued in its entirety.

Section 02552 HOT BITUMINOUS PAVEMENT is revised and reissued in its entirety.

Section 13122 PRE-ENGINEERED MODULAR RESTROOMS, TYPE I AND II is revised and reissued in its entirety.

Section 13124 PRECAST CONCRETE TABLES is revised and reissued in its entirety.

Section 13125 CHARCOAL GRILLS is revised and reissued in its entirety.

Section 13126 TRASH RECEPTACLES is revised and reissued in its entirety.

Section 13127 PREFABRICATED METAL SITE SHELTER is revised and reissued in its entirety.

16375 ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND is revised and reissued in its entirety.

16400 ELECTRICAL is revised and reissued in its entirety.

Figure 1a, page 65, is added at the end of Section 16400.

Figure 1b, page 67, is added at the end of Section 16400.

Figure 2, pages 13,14 and 17 is added at the end of Section 16400.

DRAWINGS

Make "pen and ink" changes as follows:

DRAWING C-106 - Delete panelboard and meter from floor plan of modular restroom. Add the following notes to Detail 2:

NOTES

1. FOR LOCATION OF PANELBOARD IN CHASE AND METER SOCKET ON REAR WALL, SEE DWG C-133.
2. FOR ROUTING OF NEW UNDERGROUND SECONDARY ELECTRIC SERVICE AND LOCATION OF SERVICE POLE, SEE DWG C-105.

DRAWING C-109 - Add the following notes to Detail 1:

NOTES

1. FOR LOCATION OF PANELBOARD IN CHASE AND METER SOCKET ON REAR WALL, SEE DWG C-133.

2. FOR ROUTING OF NEW UNDERGROUND SECONDARY ELECTRIC SERVICE AND LOCATION OF SERVICE POLE, SEE DWG C-105.

DRAWING C-116 - Parallel to BASELINE "II", delete the dimensions of 52.451m and 62.80m.

DRAWING C-117 – Add the following notes to Detail 1:

NOTES

1. FOR LOCATION OF PANELBOARD IN CHASE, SEE DWG C-134. NO METER SOCKET REQUIRED.
2. FOR ROUTING OF NEW UNDERGROUND SECONDARY ELECTRIC SERVICE, SEE DWG C-116.
3. LOCATION OF EXISTING MANHOLE AND APPROXIMATE LOCATION OF EXISTING UNDERGROUND CONDUIT TO MANHOLE NOT SHOWN. SEE DWG C-116.

DRAWING C-129 - Detail 2, change note from "PRECAST CONCRETE TABLE (RE:DETAIL 4)" to "PRECAST CONCRETE TABLE (RE:DETAIL 5)". Delete Detail 6 and references to the detail.

DRAWING C-133 - Move panelboard (PB) to opposite wall of chase. Add CLECO electric meter to outside of rear wall on left side of door where it will be on the same side of the chase as the relocated panelboard.

DRAWINGS C-105, C-116, and C-121 are reissued by this amendment.

Pages revised by this amendment have the notation "REVISED BY AMENDMENT 0007" at the bottom of the page. Text added by this amendment is shown as underlined. Text deleted by this amendment is shown as overstruck.

Encls: Section 02466, Pages 1 thru 4

Section 02552, Pages 1 thru 5

Section 13122, Pages 1 thru 6

Section 13124, Pages 1 thru 3

Section 13125, Pages 1 thru 3

Section 13126, Pages 1 thru 3

Section 13127, Pages 1 thru 6

Section 16375, Pages 1 thru 11

Section 16400, Pages 1 thru 7

Figure 1a, page 65

Figure 1b, page 67

Figure 2, pages 13,14 and 17

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SECTION 02466

DRILLED FOUNDATION CAISSONS (PIERS)

PART 1 GENERAL

~~1.4 SUBMITTALS~~

~~Government approval is required for submittals with a "CA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:~~

~~SD-08 Statements~~

~~Qualifications; FIO.~~

~~Qualifications of the foundation system Contractor shall show that he has been engaged in the successful installation of drilled foundation caissons for at least 5 years.~~

1.1 QUALIFICATIONS

The work shall be performed by a contractor or ~~specialty~~ subcontractor, ~~specializing in the specified foundation system and~~ having experience installing the specified foundation system under similar subsurface conditions.

1.2 SEQUENCE OF WORK

1.2.1 Caisson Excavation

Excavation of caissons or groups of caissons shall be performed so that reinforcing steel and concrete placement is a continuous operation performed the same day that the excavation is completed. Excavations shall not be left open overnight.

1.2.2 Acceptance

Concrete shall be placed within 3 hours after approval of the completed excavation.

1.3 SUPERVISION, INSPECTION, AND SAFETY

1.3.1 Contractor Supervision

The Contractor shall provide for the supervision and quality control of all phases of drilled pier construction. Quality control shall be the Contractor's responsibility as outlined in Section 01451 CONTRACTOR QUALITY CONTROL. Each drilled pier excavation shall be checked by the Contractor for its depth, water removal, cleanup, workmanship, and for all tolerance

requirements before any concrete is placed.

1.3.2 Government Inspection

The Contracting Officer will inspect each drilled pier excavation. Concrete shall not be placed until the excavation has been approved by the Contracting Officer. The Contractor shall furnish the Contracting Officer all necessary equipment required for proper inspection of drilled pier excavations.

PART 2 PRODUCTS

2.1 CONCRETE WORK

Concrete work shall be in accordance with requirements of Section 03308 CONCRETE, as modified herein.

PART 3 EXECUTION

3.1 PREPARATION

- a. Caissons shall be excavated to established depths and dimensions shown. Bottoms of caissons shall be cleaned of loose or soft material and leveled. Excavated material shall be disposed of in accordance with Section 02226 EXCAVATION, FILL, BACKFILL AND EMBANKMENT.
- b. Water that flows into the excavations shall be continuously removed and all water shall be removed from the excavation bottom, to the extent possible, prior to concrete placement. The maximum permissible depth of water will be 50 mm. In the event of a severe water condition that makes it impossible or impractical to dewater the excavation, concrete shall be placed using underwater tremie after water movement has stabilized.
- c. Each caisson excavation will be inspected and approved by the Contracting Officer prior to placing concrete.

3.2 INSTALLATION

- a. Concrete shall be continuously placed by methods that ensure against segregation and dislodging of excavation sidewalls, and shall completely fill the shaft. Concrete shall be placed by pumping or drop chutes in dry holes and by tremie or pumping in wet holes. The discharge shall be kept a minimum of 1 m below the fresh concrete surface during placement. Drilling of caissons or driving of casings shall not be within 6 m of concrete placed within the last 3 days.
- b. Concrete in dry batter caissons shall be placed with a drop chute extending within 1 m of the concrete surface in the excavation.
- c. Concrete shall be vibrated for full height of caisson. Belled caissons shall be vibrated full height.

3.3 TOLERANCES

- a. Any caisson out of center or plumb beyond the tolerance specified shall be corrected as necessary to comply with the tolerances and the Contractor shall bear any cost of correction.
- b. Cross sections of shafts shall not be less than design dimensions.
- c. Caissons shall be installed with top location deviating a maximum of 75 mm from centerline locations.
- d. Vertical caissons shall be installed plumb within a maximum of 38 mm.

3.4 PROTECTION

Protection shall be provided around top of the excavation to prevent debris from being dislodged into the excavation and concrete.

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SECTION 02552

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SECTION 02552

HOT BITUMINOUS PAVEMENT

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES.

SD-01 Data

Admixtures; FIO. Mill Test Reports; FIO.

SD-09 Reports

Job-Mix Formula; GA.

Materials test results, asphalt content design.

SD-13 Certificates

Hot Bituminous Mix; GA.

Manufacturer's certification that mix meets job-mix specification.

1.2 REGULATORY REQUIREMENTS

The regulation requirements listed below form a part of this specification to the extent referenced. The regulatory requirements are referred to in the text by basic designation only.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (LA DOTD)

LA DOTD-01 (1992) Standard Specifications for Roads and Bridges

1.3 PREPARATION, STORAGE, AND TRANSPORTATION OF BITUMINOUS MIXTURE

The bituminous mixture shall be prepared, stored, and transported as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures".

1.4 WEATHER LIMITATIONS

Weather limitations for the construction of hot bituminous pavements shall be as specified in LA DOTD-01, Section 501.04, "Weather Limitations".

PART 2 PRODUCTS

2.1 HOT BITUMINOUS PAVEMENT

Hot bituminous pavement shall consist of coarse aggregate, fine aggregate, mineral filler, bituminous material, and approved additives of the qualities and in the proportions specified in LA DOTD-01, Section 501.

2.1.1 Aggregates

Aggregates shall meet the requirements as specified in LA DOTD-01, Section 1003.01 and 1003.06, "AGGREGATES FOR ASPHALTIC MIXTURES", paragraph (a)(1), "Gravel, Stone and Crushed Slag".

2.1.2 Bituminous Material

Bituminous material shall meet the requirements specified by LA DOTD-01, Section 1002, "ASPHALTIC MATERIALS AND ADDITIVES".

2.2 PROPORTIONING OF MIXTURE

2.2.1 Job-Mix Formula

The Contractor shall determine the job-mix formula as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", for Type 3 Mixture, and submit the information listed in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.03(b), "Job Mix Formula" to the Contracting Officer for approval at least 30 days prior to the time of proposed use. Samples are not required. Full manufacturers' data for any admixtures and mill test reports for bituminous materials are required to be submitted.

Tentative approval of the proposed job-mix formula will be made in writing. The job-mix formula will remain tentative until satisfactory performance of the mix is determined by construction on the job.

2.2.2 Test Properties of Bituminous Mixtures

The finished mixture shall meet the requirements as specified by LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.03, "Design and Quality Control of Mixtures".

2.3 ACCEPTABILITY OF HOT BITUMINOUS MIX

The Contractor shall furnish written certification that all hot bituminous mix used on the job meets the specifications of the job-mix formula within the tolerances allowed by LA DOTD-01, Section 501, including Table I "Requirements for Asphaltic Concrete Mixtures".

PART 3 EXECUTION

3.1 PLANT, EQUIPMENT, MACHINES, AND TOOLS

Plant, equipment, machines, and tools for the manufacture and construction of hot bituminous pavements shall be as specified in LA DOTD-01, Section

503, "Asphaltic Concrete Equipment and Processes".

3.2 ACCESS TO PLANT AND EQUIPMENT

The Contracting Officer shall have access at all times to all parts of the paving plant for checking the adequacy of the equipment in use; inspecting operation of the plant; verifying weights, proportions, and character of materials; and checking temperatures maintained in the preparation of the bituminous hot mix.

3.3 GRADE CONTROL

Lines and grades shall be established and maintained by means of line and grade control stakes placed at the site by the Contractor.

3.4 GRADE AND SURFACE SMOOTHNESS REQUIREMENTS

Grade and surface smoothness requirements shall be as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.10, "Surface Tolerance Requirements", except that Profile Index requirements do not apply.

3.5 BASE COURSE CONDITIONING

The base course shall be inspected for adequate compaction and compliance with surface tolerances as specified in LA DOTD-01, Section 301, "Class I Base Course" prior to construction of the hot bituminous pavement. Unsatisfactory areas will be corrected.

3.6 ASPHALTIC PRIME COATING

The surface of previously constructed granular base course shall be prime coated with a coat of bituminous material as specified in LA DOTD-01, Section 505, "Asphaltic Prime Coat". The vertical surface of the adjoining pavement shall also be coated with a light prime coat.

3.7 PLACEMENT AND COMPACTION OF HOT BITUMINOUS PAVEMENT

Placement and compaction of the hot bituminous pavement shall be as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures".

3.8 PROTECTION OF PAVEMENT

After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until the pavement has cooled to a temperature of 60 degrees C.

3.9 SAMPLING AND TESTING

The Contractor shall be responsible for all check and assurance testing. This includes the Contractor performing tests that LA DOTD-01 indicate will be performed by the "Department" or "Engineer". The Contractor shall perform a sufficient number of each of the required tests to demonstrate to the Contracting Officer that the specifications have been complied with. Testing procedures and frequency shall be in accordance with the

appropriate section of LA DOTD-01. The Government reserves the right to perform independent tests and checks.

3.10 ACCEPTABILITY OF WORK

3.10.1 Density

The average mat density shall meet the requirements of LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.12.b and Table 1. Adjustments to payment for the work with densities falling outside these limits will be made as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.14. Asphaltic concrete pavement with less than 96 percent density shall be removed replaced with an acceptable compacted pavement at no additional cost to the Government.

3.10.2 Thickness

Thickness requirements shall be as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.11, "Dimensional Requirements".

3.10.3 Surface Tolerances

Surface tolerances shall be as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.10, "Surface Tolerance Requirements". Out of tolerance work shall be corrected as specified in LA DOTD-01, Section 501, "Asphaltic Concrete Mixtures", paragraph 501.10.6, "Correction of Deficient Areas".

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SECTION 13122

PRE-ENGINEERED MODULAR RESTROOMS, TYPE I AND II

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SECTION 13122

PRE-ENGINEERED MODULAR RESTROOMS, TYPE I AND II

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

BUILDING OFFICIALS & CODE ADMINISTRATORS INTERNATIONAL (BOCA)

BOCA Plumbing Code (1997) International Plumbing Code

FEDERAL STANDARDS (FED-STD)

FED-STD 795 (Basic) Uniform Federal Accessibility Standards

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL (SBCCI)

SBCCI Bldg Code (1994) Standard Building Code

1.2 DESCRIPTION OF WORK

Work of this section includes all materials and labor required in the placement and erection of the Pre-engineered Modular Restroom buildings complete, cleaned, operational, and ready for public use. Generally, work will include: site preparation and grading, excavation for fill, reinforced concrete, foundation construction, buildings and building construction, water, sewer, and electrical connections.

1.3 DESIGN CRITERIA

Members to withstand dead load and design loads due to pressure and suction of wind gravity calculated in accordance with latest version of SBCCI Bldg Code.

Roof Live Load = 0.96 kPa
Snow Load = 0.24 kPa
Roof Dead Load = 0.72 kPa
Wall Dead Load = 4.79 kPa
Seismic Performance Category B
Wind Speed = 38.0 m/s
Wind Exposure = D

Soil Bearing = 38.3 kPa

Design shall meet the Americans with Disabilities Act Accessibility Guidelines (ADAAG), FED-STD 795.

1.4 BUILDING DESCRIPTION

1.4.1 Summary

The pre-engineered restroom buildings are to be erected or assembled on a building manufacturer's reinforced concrete slab. The building is to be constructed of split-faced concrete block which is then grouted solid, or concrete that looks like spit-faced concrete block. Each building shall have three (3) entry doors, four (4) vandal resistant windows, two louvered insect screens, gable vents or full length ridge vents, and roof panels or conventional roof trusses installed. These are all defined in PART 2 PRODUCTS. This building shall be designed in accordance with the latest version of SBCCI Bldg Code. The restroom at Lock and Dam No. 3 West shall be approximately 38 square meters and the restroom at Lock and Dam No. 4 West and 5 East shall be approximately 54 square meters with an approximate 2.5 meters private entryway in front of each toilet room with three separate rooms for mechanical, men's toilet, and women's toilet. Buildings shall have a gable roof. All electrical and plumbing shall meet all national, state, and local laws.

1.4.2 Men's Restroom Layout

The Type I restroom layout shall be as follows:

- a. One handicap wall mounted lavatory with mirror mounted above lavatory.
- b. One urinal.
- c. One handicap water closet with one 914 mm and one 1066 mm stainless steel grab bars.

The Type II restroom layout shall be as follows:

- a. Two wall mounted lavatories, one of which is handicap, with mirrors mounted above each lavatory.
- b. Two urinals.
- c. One handicap water closet with one 914 mm and one 1066 mm stainless steel grab bars.

1.4.3 Women's Restroom Layout

The Type I restroom layout shall be as follows:

- a. One handicap wall mount lavatory with mirror mounted above lavatory.
- b. One standard water closet.

- c. One handicap water closet with one 914 mm and one 1066 mm stainless steel grab bars.

The Type II restroom layout shall be as follows:

- a. Two wall mount lavatories, one of which is handicap, with mirrors mounted above each lavatory.
- b. Two standard water closets.
- c. One handicap water closet with one 914 mm and one 1066 mm stainless steel grab bars.

1.4.4 Mechanical Room

The mechanical room shall contain the following items upon entering the steel entry door:

- a. Utility sink.
- b. Electric room heater.
- c. Electrical panel.
- d. Plumbing for a hose bib shall be located on the outside of the building.
- e. Blow-off control unit with digital 7-day timer, 6 cycles/day minimum, single pole, single throw switch with built in normally closed brass bodied solenoid valve.

1.4.5 Lighting

Provide lighting at each entrance and in each room. Lighting levels shall be in accordance with IES standards. Lighting shall be controlled by ceiling-mounted occupancy sensors. Infrared type shall be passive with long-range coverage pattern designed for hallways at entrances. Ultrasonic type shall be used inside restrooms.

1.4.6 Transformer

For the the restrooms at Locks and Dams No. 4 West and No. 5 East, provide dry-type transformer to transform the 480-volts from the lock and dam to 120/240-volts for the panelboard. Transformer shall have the following ratings:

- a. 10 kVA, 480-120/240-volts, 1-phase, 3-wire, 60 Hz
- b. 2-5% FCBN primary taps
- c. 185°C Insulation System, 115°C rise
- d. Sand and resin encapsulated design

e. Totally enclosed, non-ventilated outdoor enclosure

1.4.7 Surge Arrester

Provide a 175-V, 2P secondary surge arrester at electrical panel wired to the line side of the main breaker, not the load side, and properly grounded.

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Drawings; GA.

Submit complete plans and elevations for restroom Types I and II, including: size and dimension of building, its components; material types and finishes; hardware; details and methods of assembling or erecting the buildings; joints and connections; details and layout of mechanical and electrical systems. The shop drawings shall be complete to allow for complete and functioning restrooms.

SD-08 Statements

Manufacturer's Product Data; GA.

Submit Manufacturer's standard literature for facility and system components specified. Submit standard literature and technical data for system components manufactured by companies other than building manufacturer such as: light fixtures, hardware, and roofing system.

1.6 CODE COMPLIANCE AND STANDARDS

All work and materials shall comply with the latest industry building codes and regulations, including but not limited to the following:

- a. BOCA Plumbing Code.
- b. FED-STD 795.
- c. NFPA 70.
- d. SBCCI Bldg Code.

1.7 PERMITS, LICENSES, FEES, AND INSPECTION

The Contractor shall obtain, pay for, and maintain all required permits, licenses and certificates of inspection. A state plumbing and electrical permit and inspection will be required for this construction.

1.8 QUALITY ASSURANCE

Structure and mechanical systems shall be pre-engineered and certified by a

registered Professional Engineer in the State of Louisiana. The Pre-engineered Modular Restroom buildings shall be installed under the supervision of a representative of the manufacturer or by individuals who can exhibit experience installing this building type.

1.9 WARRANTY

The modular restrooms and all their associated components shall be warranted against defects in materials and workmanship for a period of not less than one year from date of final acceptance.

PART 2 PRODUCTS

2.1 GENERAL

The Contractor shall furnish and install or erect pre-engineered modular restrooms with the equipment described below. Complete installation by the Contractor shall be coordinated with the manufacturer and the Contracting Officer. The Contractor shall provide and install all required components, as specified by the manufacturer with the approval of the Contracting Officer.

2.2 KEYING

Locks shall be keyed in sets or subsets as scheduled. Locks shall be furnished with the manufacturer's standard construction key system. Change keys for locks shall be stamped with change number and the inscription "U.S. Property - Do Not Duplicate". Keys shall be supplied as follows:

Locks:	3 change keys each lock.
Master Keyed sets:	2 keys each set.
Construction keys:	2 total.
Blank Keys:	10 total.

The keys shall be furnished to the Contracting Officer arranged for key control system storage in sets or subsets as scheduled.

PART 3 EXECUTION

3.1 GENERAL

Pre-engineered modular restroom buildings are to be installed or erected in strict accordance with the manufacturer's instructions. The Contractor shall coordinate with the manufacturer and the Contracting Officer to determine responsibilities for total project requirements. Installer shall be thoroughly acquainted with installation requirements prior to beginning construction. Work shall be coordinated with site work and utility construction as a part of, or adjacent to, building installations.

In preparation for installing the pre-engineered building, verify final layout and building elevations with the Contracting Officer. Clear only the essential area of construction of trees and vegetation.

Excavate for building foundation or placement in accordance with the

manufacturer's requirements. Provide plumbing and electrical rough-ins to building pad. Construct building pad and foundation. Erect or assemble pre-engineered restroom. Install fixtures and accessories. Complete interior plumbing. Test, flush and sanitize water lines. Complete electrical installation. Use approved conduit or equivalent to house all surface run wiring to electrical fixtures. Complete adjacent site work as detailed on drawings. Grade site to obtain positive drainage away from all structures. Topsoil, fine grade and seed all areas of construction disturbance in accordance with other sections of these specifications. Thoroughly clean all surfaces, interior and exterior, making facility ready for public use.

-- End of Section --

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SECTION 13124

PRECAST CONCRETE TABLES

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SECTION 13124

PRECAST CONCRETE TABLES

PART 1 GENERAL

1.1 Description of Work

Work of this section includes all materials and labor required in the placement and erection of the ~~precast concrete tables and benches, on the drawings,~~ at each Picnic Site for Sites 3(East), 3(West), 4(East), 4(West), 5(East) and 5(West). Generally, work will include: assembly, erection, placement, anchorage and all materials required for complete installation.

1.2 Code Compliance

All work and materials shall comply with the latest industry building codes and regulations including but not limited to the following:

Standard Building Code (SBC) - Latest Edition

Uniform Federal Accessibility Standards (UFAS) - Latest Edition

1.3 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 33 (1997) Concrete Aggregates

ASTM C 150 (1997) Portland Cement

1.4 QUALITY ASSURANCE

Precast concrete tables and benches shall be ~~manufactured~~ standard products by a ~~company~~ companies having a minimum of five years experience customarily engaged in the manufacture and assembly of these components.

1.5 DESCRIPTION

Table dimensions shall be ~~as shown on Drawing, C-129~~ approximately 2440 mm long x 915 mm wide x 760 mm high. Benches shall be approximately 2440 mm long x 305 mm wide x 460 mm high. Handicapped (H/C) tables shall allow for a minimum, unobstructed overhang of 460 mm on at least one end of the table. ~~All exposed surfaces shall be treated to remove the surface matrix and expose the aggregate produced by chemical retardant - not sandblasting. All precast shall have the water repellent sealer treatment applied in strict accordance with manufacturer's specifications. All tolerances shall be within 3 mm of specified dimensions, designed for structural analysis~~

~~and calculations.~~

1.6 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Drawings; FIO.

Provide complete plans and specifications with dimensions, general construction component parts, anchoring details, hardware details, finishes, and assembling details.

1.7 WARRANTY

~~Precast concrete tables shall be warranted against defects in materials and workmanship for a period of not less than three (3) years from date of final acceptance.~~ Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Portland Cement

ASTM C 150, Type 1 or 3, low alkalai.

2.1.2 Aggregate

ASTM C 33

Color to be uniform throughout.

2.1.3 Pozzolan

Flyash shall comply with requirements of Section 03308 CONCRETE, paragraph POZZOLAN.

2.1.4 Other Materials

All other materials shall comply with the requirements of Section 03308 CONCRETE.

PART 3 EXECUTION

3.1 ERECTION

Assemble and erect all components in accordance with manufacturer's recommendations. Do not field cut or alter members.

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SECTION 13125

CHARCOAL GRILLS

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SECTION 13125

CHARCOAL GRILLS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

Work of this section includes all materials and labor required in the placement and erection of the charcoal grills, as shown on the drawings, at each picnic site for Sites 3(East), 3(West), 4(East), 4(West), 5(East) and 5(West). Generally, work will include: assembly, erection, placement, all excavation required for grill foundations or supports and all materials required for complete installation.

1.2 CODE COMPLIANCE

All work and materials shall comply with the latest industry building codes and regulations.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Drawings; FIO.

Provide complete plans and specifications with dimensions, general construction component parts, anchoring details, hardware details, finishes, and assembling details.

1.4 QUALITY ASSURANCE

Charcoal grills shall be manufactured by companies having a minimum of five years experience in manufacture and assembly of these components.

1.5 DESCRIPTION

Firebox shall have a length of 508 mm, a width of 381 mm, and a height of 254 mm, and shall be fabricated from 7-gauge steel. For safety, all exposed corners of firebox shall be rounded to a 38 mm radius. For drainage, holes shall be punched in rear corners of firebox bottom. Cooking grate shall be fabricated from 12.7 mm steel bars with a cooking area of 0.194 square meters. Bars shall be spaced 28.6 mm on center. Heavy-duty 89 mm OD iron pipe, 1016 mm in length shall be included for stationary mounting in concrete. Grill shall rotate 360 degrees, but will be non-removable. Cooking grate shall be two 15.9 mm steel support bars

such that it will be adjustable to four different heights from 82.6 mm to 216 mm above fire bed. Grill shall be equipped with non-conductive spring handle grips. Standard finish will be non-toxic, electrostatically applied, baked on black polyester dry powder.

1.6 WARRANTY

~~Charcoal grills shall be warrantied against defects in materials and workmanship for a period of not less than three (3) years from date of final acceptance.~~ Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

PART 2 PRODUCTS

2.1 MATERIALS

Firebox:.....7-gauge steel (minimum)
Cooking grate:.....1.27 mm steel bars
Stationary mount:.....heavy-duty 89 mm OD (1016 mm length
above ground)
Concrete foundation:...as specified by manufacturer
Handle grips:.....non-conductive spring handle grips

2.2 FINISH

For safety, all exposed corners of firebox shall be rounded to a 38 mm radius. For drainage, holes shall be punched in rear corners of firebox bottom. Cooking grate area of 0.194 square meters. Bars shall be spaced 28.6 mm on center. Cooking grate shall be two 15.9 mm steel support bars such that it will be adjustable to four different heights from 82.6 mm to 216 mm above fire bed. Grill shall rotate 360 degrees, but will be non-removable. Standard finish will be non-toxic, electrostatically applied, baked on black polyester dry powder.

PART 3 EXECUTION

3.1 ERECTION

Assemble and erect all components in accordance with manufacturer's recommendations. Do not field cut or alter members.

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SECTION 13126

TRASH RECEPTACLES

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PART 2 PRODUCTS

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PART 3 EXECUTION

- 3.1 ERECTION

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SECTION 13126

TRASH RECEPTACLES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

Work of this section includes all materials and labor required in the furnishing and placement of the all trash receptacles, as shown on the drawings, at each picnic sites for Sites 3(East), 3(West), 4(East), 4(West), 5(East) and 5(West). Generally, work will include: assembly, placement and all materials required for complete installation.

1.2 CODE COMPLIANCE

All work and materials shall comply with the latest industry building codes and regulations.

1.3 QUALITY ASSURANCE

Trash receptacles shall be manufactured by companies having a minimum of five years experience in manufacture and assembly of these components.

1.4 DESCRIPTION

Trash receptacles shall be made of a precast concrete shell, 660 mm in diameter, 813 mm in height and weighing a minimum of 226.8 kg. The receptacle shall be provided with an approximate 0.11 cubic meter metal liner which can be removed for cleaning. The precast concrete shell shall come with a heavy-duty, minimum 12 gauge steel, hinged lid. The lid shall be welded to the hinge and the hinge bolted to the inside of the precast concrete shell with stainless steel bolts. The lid shall be provided with an adjustable security cable to limit lid opening. Lids shall be zinc dichromate plated and finished with a top coat of polyester paint in Chestnut Brown, or as selected by the Contracting Officer.

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Drawings; FIO.

Provide complete plans and specifications with dimensions, general construction component parts, anchoring details, hardware details, finishes, and assembling details.

1.6 WARRANTY

~~Trash receptacles shall be warranted against defects in materials and workmanship for a period of not less than three (3) years from date of final acceptance.~~ Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

PART 2 PRODUCTS

2.1 MATERIALS

Shell:.....660 mm dia. x 813 mm height x 226.8 kg (min.) precast
concrete
Liner:.....heavy-duty aluminum, removable
Lid:.....heavy-duty, 18 gauge steel
Hinge:.....heavy-duty

2.2 FINISH

Exposed surfaces treated to remove surface matrix and expose aggregate.
Water repellent sealer on all surfaces. Color to be uniform throughout.
Standard finish will be non-toxic, electrostatically applied, baked on
black polyester dry powder.

PART 3 EXECUTION

3.1 ERECTION

Assemble and erect all components in accordance with manufacturer's
recommendations. Do not field cut or alter members.

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SECTION 13127

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SECTION 13127

PREFABRICATED METAL SITE SHELTER

PART 1 GENERAL

1.1 SCOPE

This specification covers the structural design, materials, and building erection of the metal building system.

The material includes all structure framing, metal roofing, siding, trim, ventilators, braces, hardware, bolts and sealants. Failure to specifically mention certain details of the building shall not relieve the Contractor of the responsibility of furnishing such details and accessories.

All materials shall be fabricated by a manufacturer who is regularly engaged in the fabrication of metal building systems and shall be fabricated in a workmanlike manner using material that is new, unused, and free from defect.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 307	(1997) Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM A 325	(1996a) Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 475	(1996) Making and Curing Concrete Test Specimens in the Field
ASTM A 572/A 572M	(1997) High-Strength Low-Alloy Columbium-Vanadium Structural Steel

1.3 BUILDING DESCRIPTION

Building is to be square in shape as shown on the drawings with finished roof plan dimensions measuring 4.88 m in each direction.

1.4 DESIGN AND CODES

1.4.1 Builtup Sections

Built-up sections, other welded members and structural shapes shall be designed in accordance with the latest edition of the American Institute of Steel Construction (AISC) "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings."

1.4.2 Light Gauge Members

Light gauge cold-formed steel members shall be designed in accordance with the latest edition of the American Iron and Steel Institute (AISI) "Specification for the Design of Light Gauge Cold-Formed Steel Structural Members."

1.4.3 Welding

All welding shall conform to the requirements of the American Welding Society (AWS "Structural Welding Code." All welders shall be qualified for the type of weld performed. No Field welding is to be performed.

1.5 DESIGN LOADS

1.5.1 Live Load

Buildings shall be designed for a live load of 146.5 kg per square meter applied to the horizontal roof projection.

1.5.2 Wind Load

Primary framing and wall components shall be designed for an applied wind pressure in accordance with the "Low Rise Building Systems Manual" of the Metal Building Manufacturing Association (MBMA), as well as the applicable building code (Southern Building Code - Coastal/90 M.P.H. wind).

1.5.3 Design Load Combinations

The Building shall be designed for all applicable load conditions.

1.6 CERTIFICATION

The building manufacturer shall furnish a letter of design certification bearing the seal of a State of Louisiana Registered Professional Engineer.

1.7 CALCULATIONS

The building manufacturer shall furnish, upon request, design calculations bearing the seal of a State of Louisiana Registered Professional Engineer. Design calculations shall be manually and/or computer generated at the discretion of the building manufacturer. Design calculations shall include the magnitude and location of design loads, support conditions, material properties and the type and size of major structural members.

1.8 DRAWINGS

Building manufacturer shall furnish to the owner an anchor bolt setting plan with column reactions. This plan is to be stamped by a State of

Louisiana Registered Professional Engineer.

Building manufacturer shall furnish steel framing drawings and details indicating location and proper erection requirements of all building components furnished.

1.9 ANCHOR BOLTS

The prefabricated metal site shelter supports shall conform to the building foundation layout as shown on Drawing C-129.

Anchor bolts shall be provided by the prefabricated metal site shelter manufacturer. Anchor bolt layout shall conform to the building foundation layout as shown on Drawing C-129.

1.9.1 CODES

The building code having jurisdiction over the area in which the site located is the Southern Building Code/Coastal.

1.10 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Drawings; FIO.

Provide complete plans and specifications with dimensions, framing plans, general construction component parts, anchoring details, anchor bolt setting plan, hardware details, finishes, and erection drawings in hard copy as well as electronically.

1.11 WARRANTY

~~Prefabricated Metal Site Shelters shall be warranted against defects in materials and workmanship for a period of not less than three (3) years from date of final acceptance.~~ Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Bars, Plates, Sheets or Strips

Hot rolled bars, plates, sheets or strips of primary frames and other welded members shall have a minimum yield stress of 380 MPa.

2.1.2 Bolts, Nuts, Washers, and Bracing

High tensile bolts, nuts and washers shall conform to ASTM A 325 and shall be medium carbon steel, quenched, tempered and plated.

Machine bolts and nuts shall conform to ASTM A 307 and shall be low carbon steel and plated.

Cable bracing shall be fabricated from 1 x 7 galvanized wire rope, extra high strength Class A, conforming to ASTM A 475. Round rod bracing shall be fabricated from material with a minimum yield stress of 448 MPa, conforming to ASTM A 572/A 572M.

Aluminum unless specified otherwise shall conform to the requirements of the Aluminum Association Series 3000 Alloy.

2.2 STRUCTURAL FRAMING

2.2.1 General

All primary and secondary framing shall be designed and fabricated for field assembly by means of bolting with the minimum amount of cutting or welding. All framing members or bundle of parts shall be identified by an easily, visible mark that is stamped, stenciled, tagged or painted.

2.2.2 Primary Framing

Primary framing shall consist of the main building frame.

2.2.3 Secondary Framing

Secondary framing shall consist of purlins, girts, eave struts, base angles, "C" sections, clips and other required components of an open sided hex type building.

2.2.4 Bolts

All structural connections shall be bolted. All bolts shall be tightened by the turn-of-nut method.

2.3 PAINT

All steel members shall be cleaned of all foreign matter and loose scale and shop prime painted with a rust inhibitive modified alkyd primer.

Two coats of exterior weather-resistant high-gloss enamel for use over primed ferrous metal surfaces paint shall be field applied. Provide finish coats that are compatible with primers used. Bolts and any surfaces from which the shop coat of paint has been worn off or has otherwise become defective shall be covered with the same paint used in the shop prime. When the touch up surfaces have dried, the field coat may be applied.

Submit to owner for review paint manufacturer's specifications and data on the proposed preparation, application procedures and dry film thickness. Paint shall be applied in accordance with manufacturer's directions.

2.4 ROOF PANELS

Panel Length: All roof panels shall be one continuous length.

Panels shall be fastened to structural members with color matched self-drilling fasteners with steel backed neoprene washers.

Sealants: Sealants shall be supplied interleaved with release paper and shall be a non-hardening pressure sensitive polymer or butyl tape mastic that is non-corrosive to metals and non-crazing with plastics.

Side laps of building with a roof slope of less than 4:12 shall have one bead of mastic.

Roof shall be 24 gauge color (color to be Contracting Officer selected) coated panels that are the manufacturer's standard provided all design criteria, including deflection, is met or exceeded.

2.5 TRIM

2.5.1 Hip

The hip of the building shall be made weather tight by the use of hip panels. Finish of hip panels shall match roof panels.

2.6 OVERHANG

Overhang shall be approximately 300 mm and conforming with the foundation layout as shown on the Slab Plan of Drawing C-129.

2.7 BUILDING ANCHORAGE

The building anchor bolts shall be galvanized and designed by the building manufacturer's Registered Professional Engineer to resist the maximum column reactions resulting from specific combinations of loadings. The anchor bolts sizes for the prefabricated metal site shelter and their location shall be specified on the anchor bolt setting plan furnished by the building manufacturer. The building manufacturer shall supply the anchor bolts.

PART 3 EXECUTION

3.1 BUILDING ERECTION

The erection of the metal building and installation of accessories shall be performed in accordance with building manufacturer's erection drawings by a qualified erector using proper tools and equipment.

Erection practices shall, in addition, conform to Section 6, Common Industry Practices, of the MBMA "Low Rise Building Systems Manual", and the AISC "Code of Standard Practice for Steel Building and Bridges". There shall be no field modifications to primary structural members, except as authorized and specified by the building manufacturer in writing.

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SECTION 16375

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SECTION 16375

ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C80.1 (1995) Rigid Steel Conduit - Zinc Coated

ANSI C119.1 (1986) Sealed Insulated Underground
Connector Systems Rated 600 Volts

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 48 (1994a) Gray Iron Castings

ASTM B 3 (1995) Soft or Annealed Copper Wire

ASTM B 8 (1993) Concentric-Lay-Stranded Copper
Conductors, Hard, Medium-Hard, or Soft

ASTM C 478 (1997) Precast Reinforced Concrete Manhole
Sections

ASTM C 478M (1997) Precast Reinforced Concrete Manhole
Sections (Metric)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C2 (1997) National Electrical Safety Code

IEEE Std 100(1996) IEEE Standard Dictionary of Electrical and Electronics
Terms

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA FB 1 (1993) Fittings, Cast Metal Boxes and
Conduit Bodies for Conduit and Cable
Assemblies

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

UNDERWRITERS LABORATORIES (UL)

UL 6	(1997) Rigid Metal Conduit
UL 486A	(1997; Rev thru Dec 1998) Wire Connectors and Soldering Lugs for Use with Copper Conductors
UL 486B	(1997; Rev Jun 1997) Wire Connectors for Use with Aluminum Conductors
UL 514A	(1996; Rev Jul 1998) Metallic Outlet Boxes
UL 651	(1995; Rev thru Oct 1998) Schedule 40 and 80 Rigid PVC Conduit
UL 1242	(1996; Rev Apr 1997) Intermediate Metal Conduit

1.2 GENERAL REQUIREMENTS

1.2.1 Terminology

Terminology used in this specification is as defined in IEEE Std 100.

1.3 SUBMITTALS

Governmental approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Materials and Equipment Lists; FIO.

A complete itemized listing of equipment and materials proposed for incorporation into the work. Each entry shall include an item number, complete catalog number, the quantity of items proposed, and the name of the manufacturer of each such item.

Installation Procedures; FIO.

Procedures shall include cable pulling plans, diagrams, instructions, and precautions required to install, adjust, calibrate, and test the devices and equipment.

SD-04 Drawings

As-Built Drawings; FIO.

The as-built drawings shall be a record of the construction as installed. The drawings shall include the information shown on the contract drawings

as well as deviations, modifications, and changes from the contract drawings, however minor. The as-built drawings shall be a full sized set of prints. The as-built drawings shall be complete and show the location, size, dimensions, part identification, and other information.

Cable Installation Reports; FIO.

Six copies of the information described below in 215.9 by 279.4 mm (8-1/2 by 11 inch) three ring binders from which material may readily be removed and replaced, including a separate section for each cable pull. Sections shall be separated by heavy plastic dividers with tabs, with all data sheets signed and dated by the person supervising the pull.

- a. Site layout drawing with cable pulls numerically identified.
- b. A list of equipment used, with calibration certifications. The manufacturer and quantity of lubricant used on pull.
- c. The cable manufacturer and type of cable.
- d. The dates of cable pulls, time of day, and ambient temperature.
- e. The length of cable pull and calculated cable pulling tensions.

1.4 DELIVERY, STORAGE, AND HANDLING

Devices and equipment shall be visually inspected by the Contractor when received and prior to acceptance from conveyance. Stored items shall be protected from the environment in accordance with the manufacturer's published instructions.

PART 2 PRODUCTS

2.1 STANDARD PRODUCT

Material and equipment shall be the standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. Items of the same classification shall be identical including equipment, assemblies, parts, and components.

2.2 NAMEPLATES

2.2.1 General

Each major component of this specification shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a nameplate securely attached to the equipment. Nameplates shall be made of noncorrosive metal. Equipment containing liquid dielectrics shall have the type of dielectric on the nameplate. Sectionalizer switch nameplates shall have a schematic with all switch positions shown and labeled. As a minimum, nameplates shall be provided for transformers, circuit breakers, meters, switches, and switchgear.

2.3 CABLES

Cables shall be type USE/RHW single conductor type unless otherwise indicated.

2.3.1 Low-Voltage Cables

Cables shall be rated 600 volts and shall conform to the requirements of NFPA 70, and must be UL listed for the application or meet the applicable section of either ICEA or NEMA standards.

2.3.1.1 Conductor Material

Underground cables shall be annealed copper complying with ASTM B 3 and ASTM B 8. Intermixing of copper and aluminum conductors is not permitted.

2.3.1.2 Insulation

Insulation must be type USE/RHW/RHH in accordance with NFPA 70, and must be UL listed for the application or meet the applicable sections of either ICEA, or NEMA standards.

2.3.1.3 Jackets

Multiconductor cables shall have an overall PVC outer jacket.

2.3.1.4 In Duct

Cables shall be single-conductor cable, in accordance with NFPA 70.

2.4 CABLE JOINTS, TERMINATIONS, AND CONNECTORS

2.4.1 Low-Voltage Cable Splices

Low-voltage cable splices and terminations shall be rated at not less than 600 Volts. Splices in conductors No. 10 AWG and smaller shall be made with an insulated, solderless, pressure type connector, conforming to the applicable requirements of UL 486A. Splices in conductors No. 8 AWG and larger shall be made with noninsulated, solderless, pressure type connector, conforming to the applicable requirements of UL 486A and UL 486B. Splices shall then be covered with an insulation and jacket material equivalent to the conductor insulation and jacket. Splices below grade or in wet locations shall be sealed type conforming to ANSI C119.1 or shall be waterproofed by a sealant-filled, thick wall, heat shrinkable, thermosetting tubing or by pouring a thermosetting resin into a mold that surrounds the joined conductors.

2.5 CONDUIT AND DUCTS

Ducts shall be single, round-bore type, with wall thickness and fittings suitable for the application.

2.5.1 Metallic Conduit

Intermediate metal conduit shall comply with UL 1242. Rigid galvanized steel conduit shall comply with UL 6 and ANSI C80.1. Metallic conduit fittings and outlets shall be cast metal and shall comply with UL 514A and NEMA FB 1.

2.5.2 Nonmetallic Ducts

2.5.2.1 Direct Burial

UL 651 Schedule 40.

2.5.3 Conduit Sealing Compound

Compounds for sealing ducts and conduit shall have a putty-like consistency workable with the hands at temperatures as low as 2 degrees C (35 degrees F), shall neither slump at a temperature of 150 degrees C (300 degrees F), nor harden materially when exposed to the air. Compounds shall adhere to clean surfaces of fiber or plastic ducts; metallic conduits or conduit coatings; concrete, masonry, or lead; any cable sheaths, jackets, covers, or insulation materials; and the common metals. Compounds shall form a seal without dissolving, noticeably changing characteristics, or removing any of the ingredients. Compounds shall have no injurious effect upon the hands of workmen or upon materials.

2.6 MANHOLES, HANDHOLES, AND PULLBOXES

Manholes, handholes, and pullboxes shall be as indicated. Strength of manholes, handholes, and pullboxes and their frames and covers shall conform to the requirements of IEEE C2. Precast-concrete manholes shall have the required strength established by ASTM C 478, ASTM C 478M. Frames and covers shall be made of gray cast iron and a machine-finished seat shall be provided to ensure a matching joint between frame and cover. Cast iron shall comply with ASTM A 48, Class 30B, minimum. Handholes for low voltage cables installed in parking lots, sidewalks, and turfed areas shall be fabricated from an aggregate consisting of sand and with continuous woven glass strands having an overall compressive strength of at least 69 MPa (10,000 psi) and a flexural strength of at least 34.5 MPa (5000 psi). Pullbox and handhole covers in sidewalks, and turfed areas shall be of the same material as the box. Concrete pullboxes shall consist of precast reinforced concrete boxes, extensions, bases, and covers.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

This specification shall apply to all work outside of the modular restroom buildings. Equipment and devices shall be installed and energized in accordance with the manufacturer's published instructions. Steel conduits installed underground shall be installed and protected from corrosion in conformance with the requirements of Section 16375 ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND. Except as covered herein, excavation, trenching, and backfilling shall conform to the requirements of Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS. Concrete work shall have minimum 20 MPa compressive strength and conform to the requirements of

Section 03308 CONCRETE.

3.1.1 Conformance to Codes

The installation shall comply with the requirements and recommendations of NFPA 70 and IEEE C2 as applicable.

3.1.2 Verification of Dimensions

The Contractor shall become familiar with details of the work, shall verify dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing any work.

3.2 CABLE AND BUSWAY INSTALLATION

3.2.1 Duct Cleaning

Duct shall be cleaned with an assembly that consists of a flexible mandrel (manufacturers standard product in lengths recommended for the specific size and type of duct) that is 6.4 mm (1/4 inch) less than inside diameter of duct, 2 wire brushes, and a rag. The cleaning assembly shall be pulled through conduit a minimum of 2 times or until less than a volume of 131 cubic centimeters (8 cubic inches) of debris is expelled from the duct.

3.2.1.1 Duct Lubrication

The cable lubricant shall be compatible with the cable jacket for cable that is being installed. Application of lubricant shall be in accordance with lubricant manufacturer's recommendations.

3.2.1.2 Cable Installation

The Contractor shall provide a cable feeding truck and a cable pulling winch as required. The Contractor shall provide a pulling grip or pulling eye in accordance with cable manufacturer's recommendations. The pulling grip or pulling eye apparatus shall be attached to polypropylene or manilla rope followed by lubricant front end packs and then by power cables. A dynamometer shall be used to monitor pulling tension. Pulling tension shall not exceed cable manufacturer's recommendations. The Contractor shall not allow cables to cross over while cables are being fed into duct. For cable installation in cold weather, cables shall be kept at 10 degrees C (50 degrees F) temperature for at least 24 hours before installation.

3.2.2 Duct Line

Cables shall be installed in duct lines where indicated. Cable splices in low-voltage cables shall be made in manholes and handholes only, except as otherwise noted. Neutral and grounding conductors shall be installed in the same duct with their associated phase conductors.

3.2.3 Cable Markers

Markers shall be located near the ends of cable runs, at each cable joint or splice, at approximately every 150 m along cable runs, and at changes in

direction of cable runs. In addition to markers, a 0.127 mm (5 mil), brightly colored plastic tape not less than 75 mm (3 inches) in width and suitably inscribed at not more than 3 m (10 feet) on centers, or other approved dig-in warning indication, shall be placed approximately 300 mm below finished grade levels of trenches.

3.2.4 Electric Manholes

Cables shall be routed around the interior walls and securely supported from walls on cables racks. Cable routing shall minimize cable crossover, provide access space for maintenance and installation of additional cables, and maintain cable separation in accordance with IEEE C2.

3.3 DUCT LINES

3.3.1 Requirements

Numbers and sizes of ducts shall be as indicated. Duct lines shall be laid with a minimum slope of 100 mm per 30 m. Depending on the contour of the finished grade, the high-point may be at a terminal, a manhole, a handhole, or between manholes or handholes. Short-radius manufactured 90-degree duct bends may be used only for pole or equipment risers, unless specifically indicated as acceptable. The minimum manufactured bend radius shall be 450 mm (18 inches) for ducts of less than 80 mm (3 inch) diameter, and 900 mm (36 inches) for ducts 80 mm (3 inches) or greater in diameter. Otherwise, long sweep bends having a minimum radius of 7.6 m shall be used for a change of direction of more than 5 degrees, either horizontally or vertically. Both curved and straight sections may be used to form long sweep bends, but the maximum curve used shall be 30 degrees and manufactured bends shall be used. Ducts shall be provided with end bells whenever duct lines terminate in manholes or handholes.

3.3.2 Treatment

Ducts shall be kept clean of concrete, dirt, or foreign substances during construction. Field cuts requiring tapers shall be made with proper tools and match factory tapers. A coupling recommended by the duct manufacturer shall be used whenever an existing duct is connected to a duct of different material or shape. Ducts shall be stored to avoid warping and deterioration with ends sufficiently plugged to prevent entry of any water or solid substances. Ducts shall be thoroughly cleaned before being laid. Plastic ducts shall be stored on a flat surface and protected from the direct rays of the sun.

3.3.3 Nonencased Direct-Burial

Top of duct lines shall be below the frost line depth of 600 mm, but not less than 450 mm below finished grade and shall be installed with a minimum of 75 mm of earth around each duct, except that between adjacent electric power and communication ducts, 300 mm of earth is required. Bottoms of trenches shall be graded toward manholes or handholes and shall be smooth and free of stones, soft spots, and sharp objects. Where bottoms of trenches comprise materials other than sand, a 75 mm layer of sand shall be laid first and compacted to approximate densities of surrounding firm soil

before installing ducts. Joints in adjacent tiers of duct shall be vertically staggered at least 150 mm. The first 150 mm layer of backfill cover shall be sand compacted as previously specified. The rest of the excavation shall be backfilled and compacted in 75 to 150 mm layers. Duct banks may be held in alignment with earth. However, high-tiered banks shall use a wooden frame or equivalent form to hold ducts in alignment prior to backfilling.

3.3.4 Installation of Couplings

Joints in each type of duct shall be made up in accordance with the manufacturer's recommendations for the particular type of duct and coupling selected and as approved.

3.3.4.1 Plastic Duct

Duct joints shall be made by brushing a plastic solvent cement on insides of plastic coupling fittings and on outsides of duct ends. Each duct and fitting shall then be slipped together with a quick 1/4-turn twist to set the joint tightly.

3.3.5 Duct Line Markers

Duct line markers shall be provided at the ends of long duct line stubouts or for other ducts whose locations are indeterminate because of duct curvature or terminations at completely below-grade structures. In addition to markers, a 0.127 mm (5 mil) brightly colored plastic tape, not less than 75 mm (3 inches) in width and suitably inscribed at not more than 3 m (10 feet) on centers with a continuous metallic backing and a corrosion-resistant 0.0254 mm (1 mil) metallic foil core to permit easy location of the duct line, shall be placed approximately 300 mm below finished grade levels of such lines.

3.4 MANHOLES, HANDHOLES, AND PULLBOXES

3.4.1 Pullboxes

Pullbox tops shall be flush with sidewalks or curbs or placed 15 mm above surrounding grades when remote from curbed roadways or sidewalks. Covers shall be marked "Low-Voltage" and provided with 2 lifting eyes and 2 hold-down bolts. Each box shall have a suitable opening for a ground rod. Conduit, cable, ground rod entrances, and unused openings shall be sealed with mortar.

3.4.2 Ground Rods

A ground rod shall be installed at the pullboxes. Ground rods shall be driven into the earth before the manhole floor is poured so that approximately 100 mm of the ground rod will extend above the manhole floor. When precast concrete manholes are used, the top of the ground rod may be below the manhole floor and a No. 1/0 AWG ground conductor brought into the manhole through a watertight sleeve in the manhole wall.

3.5 CONNECTIONS TO BUILDINGS

Cables shall be extended into the various buildings as indicated, and shall be connected to the first applicable termination point in each building.

3.6 GROUNDING

Metallic frames and covers of pull boxes shall be grounded by use of a braided, copper ground strap with equivalent ampacity of No. 6 AWG.

3.7 ACCEPTANCE

Final acceptance of the facility will not be given until the Contractor has successfully completed all tests and after all defects in installation, material or operation have been corrected.

3.8 FIELD TESTING

3.8.1 General

Test the existing 600-volt cables at the locks and dams to which a new underground service cable will be connected and all new underground 600-volt cables as follows:

3.8.1.1 Visual and Mechanical Inspection

- a. Compare cable data with drawings and specifications.
- b. Inspect exposed sections of cables for physical damage and correct connections.
- c. Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data.
- d. Inspect compression-applied connectors for correct cable match and indentation.
- e. Verify cable color coding with applicable specifications and the National Electrical Code.

3.8.1.2 Electrical Tests

- a. Perform insulation-resistance test on each conductor with respect to ground and adjacent conductors; that is, phase-phase, phase-neutral, and phase-ground, 2 conductors at a time, for all conductors the same trench, cable tray, conduit or other raceway. The conductors shall include insulated phase conductors, insulated and bare neutral and grounding conductors. If no grounding conductor wire or cable is present, then include metallic cable tray, conduit or other raceway as the grounding conductor. The existing Type TC cables at the locks and dams are 3/C 3/0WG; 6 tests total are required - 3 phase-phase and 3 phase-ground. For a 120/240-V, 1-phase 3-wire service, 6 tests total are also required - 1 phase-phase, 2 phase-neutral, 2 phase-ground, and 1 neutral-ground. Applied potential shall be 1000 volts dc for 600

volt rated cable. Test duration shall be 60 seconds. Readings shall be taken and recorded at 30 seconds and 60 seconds for each conductor pair.

b. Perform resistance measurements through all bolted connections with low-resistance ohmmeter.

c. Perform continuity test to insure correct cable connection.

3.8.1.3 Test Values

a. Compare bolted connection resistance to values of similar connections.

b. Bolt-torque levels should be as specified by the manufacturer.

c. Microhm or millivolt drop values shall not exceed the high levels of the normal range as indicated in the manufacturer's published data. If manufacturer's data is not available, investigate any values which deviate from similar connections by more than 50 percent of the lowest value.

d. Minimum insulation-resistance values should not be less than 50 megohms.

e. Investigate deviations between adjacent phases.

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DIVISION 16 - ELECTRICAL

SECTION 16400

ELECTRICAL

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SECTION 16400

ELECTRICAL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1784	(1997) Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
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NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA RN 1	(1989) Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1999) National Electrical Code
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UNDERWRITERS LABORATORIES (UL)

UL 6	(1997) Rigid Metal Conduit
UL 44	(1997; Rev Mar 1999) Thermoset-Insulated Wires and Cables
UL 486A	(1997; Rev thru Dec 1998) Wire Connectors and Soldering Lugs for Use with Copper Conductors
UL 510	(1994; Rev thru Apr 1998) Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape
UL 651	(1995; Rev thru Oct 1998) Schedule 40 and 80 Rigid PVC Conduit
UL 797	(1993; Rev Mar 1997) Electrical Metallic Tubing

1.2 GENERAL REQUIREMENTS

1.2.1 Conformance to Codes

Electrical installation shall conform to applicable rules of NFPA 70.

1.2.2 Standards

Electrical materials and equipment shall be new and bear the UL label wherever standards have been established by that agency. In lieu of such label, a written certificate from a nationally recognized testing agency adequately equipped and competent to perform such services may be submitted, stating that the items have been tested and that the units conform to requirements specified herein, including methods of testing of the specified agencies.

1.2.3 Standard Products

Materials and equipment furnished under this specification shall be standard cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be manufacturer's latest standard design that complies with the specification requirements.

1.2.4 Nameplates

Major components of equipment, including lighting fixtures, shall have manufacturer's name, address, catalog number, model, style, or type on a plate or label securely and conspicuously attached to each item of equipment. Nameplates shall conform to NEMA standards.

1.3 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Materials and Equipment Lists; FIO.

A complete itemized listing of equipment and materials proposed for incorporation into the work. Each entry shall include an item number, complete catalog number, the quantity of items proposed, and the name of the manufacturer of each such item.

SD-09 Reports

Materials and Equipment; FIO.

The label or listing of the Underwriter's Laboratory, Inc., as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this label or listing, a statement may be submitted from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required procedures and that the materials and equipment comply with all contract requirements.

1.4 DELIVERY AND STORAGE

All equipment delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variation, dirt and dust, or other contaminants.

1.5 ELECTRIC SERVICES

1.5.1 Local Electric Utility

~~CLECO, 2605 Holloway Road, Pineville, LA, 71360; contact Mr. Paul Schoppe, telephone number (318) 484-4155, Fax (318) 484-4145.~~ Concerning electric service at Site 3W, contact Mr. Paul Schoppe, CLECO, Pineville Service Center, 2605 Holloway Road, Pineville, LA 71360, telephone (318) 484-4155, Fax (318) 484-4145. For electric service at Sites 4W and 5E, permanent electric service will be provided by the Government by tapping existing feeders.

1.5.2 Temporary Service

~~The Contractor shall provide electricity during construction and for performance of the field tests.~~ At all sites, the Contractor shall provide electricity during construction, either by contracting with the local electric utility, providing engine-generator sets, or both. The Government will provide electricity for performance of the field tests.

1.5.3 Utility Pre-Construction Conference

~~Contractor shall arrange utility pre-construction conference with the Contracting Officer and his representatives 30 days before beginning any electrical work associated with poles, transformer, and related conduits, grounding, and apparatus.~~ At Site 3W, Contractor shall arrange on-site utility pre-construction conference with CLECO and the Contracting Officer and his representatives 30 days before beginning any electrical work associated with the permanent electric service, namely service pole, related conduit, grounding, and apparatus.

At Sites 4W and 5E, at the same time as the conference for Site 3W, Contractor shall arrange on-site pre-construction conferences with the Contracting Officer and his representatives before beginning any electrical work associated with transformers, and related conduits, grounding, and apparatus.

1.5.4 Permanent Service

Service for Site 3W will be negotiated with the local electric utility by others, not the Government.

Contractor shall cooperate with the local electric utility to coordinate installation of the permanent electric service facilities with the electrical work and plan all on-site construction to avoid interference with the installation of the service facilities. Contractor shall give local electric utility access to the construction site to install the

service facilities.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Materials and equipment shall be as specified herein and in paragraph GENERAL REQUIREMENTS. The Contractor is responsible for all electrical components required for this job. Submittals shall be as specified in paragraph SUBMITTALS.

2.2 CONDUIT

2.2.1 Rigid conduit

Zinc coated steel, UL 6.

2.2.2 Electric Metallic Tubing

Steel, UL 797.

2.3 INSULATED WIRE

2.3.1 Rubber Insulated

UL 44, Type RHW.

2.4 SOLDERLESS PRESSURE CONNECTIONS

UL 486A.

2.5 TAPES

Rubber or plastic, UL 510.

2.6 SERVICE DISCONNECT

Thermal overload circuit breaker type equipped with an external lever or handle for manual operation. Each unit shall be enclosed in a code-gauge sheet metal cabinet. Flush mounted enclosures shall have screw fastened covers. Surface-mounted enclosures shall have hinged doors and catches. Neutral connection shall be solid throughout.

2.7 GROUND RODS

Copper-clad steel not less than 18.8 mm diameter and 2.4 meters long.

PART 3 EXECUTION

3.1 ELECTRICAL WORK

Wiring for all electrical work shall consist of nonmetallic-sheathed cables in areas where permitted by NFPA 70. Wiring shall not be installed in concrete slabs-on-grade. Where run below slabs-on-grade, or in concrete

above grade, wiring shall be installed in rigid heavy wall plastic conduit conforming to UL 651 or rigid steel conduit. Rigid steel conduit installed below slabs-on-grade or in the ground shall be field wrapped with 0.25 mm thick pressure sensitive plastic tape applied with a 50 percent overlap; or shall have a factory applied coating with minimum thickness not less than the following:

- a. Low density or medium density plastic conforming to ASTM D 1784 for polyvinylchloride 0.5 mm thick.
- b. Epoxy resin conforming to NEMA RN 1, Type A-40.

3.2 CONDUIT AND TUBING SYSTEM

Conduit and tubing shall be installed in accordance with NFPA 70. Minimum size of conduit and tubing shall be 12.5 mm.

3.3 CONDUCTORS

Conductors shall be of copper. Insulated wire connectors or solderless pressure connectors properly taped shall be utilized for all splices where possible. Solderless mechanical joints insulated with tape shall be kept to a minimum.

3.3.1 Sizes

Branch circuit conductors shall be not smaller than No. 12 AWG copper. Class 1 remote control and signal circuit conductors shall be not less than No. 14 AWG. Class 2 low energy remote control and signal circuit conductors shall be not less than No. 16 AWG.

3.3.2 Insulation

Conductors within the structure shall have type RHW or THW insulation. Conductors smaller than No. 8 AWG may have type TW insulation except that No. 16 AWG conductors for Class 2 remote control signal-circuits shall have thermoplastic insulation type TF conforming to NFPA 70. Direct burial conductors shall have type USE or type UF, 600-volt insulation.

3.4 GROUNDING

Conduit systems, grounding conductor for non-metallic sheathed cables and neutral conductor of the wiring system shall be grounded. Ground connection shall be made to ground rods driven on the exterior of the building. Maximum resistance of the driven ground shall not 25 ohms under normally dry conditions. If this resistance cannot be obtained with a single rod, additional rods shall be installed not closer than 3 meters on centers; or if sectional type rods are used, additional sections may be coupled and driven with the first rods, so that the resultant resistance may not exceed 25 ohms.

3.5 FIELD TESTING

This paragraph applies to all electromechanical systems, equipment, and

work in Divisions 13, 15, and 16.

3.5.1 Raceway Test

After all raceways have been installed and before any conductors are pulled into them, a wire brush shall first be drawn completely through the entire length of the raceway followed by a swab, then a mandrel, 1/8 inch less than the inside diameter of the raceway, to insure that the raceway is clear and has not been kinked during installation or blocked by foreign matter or by the pouring of concrete.

3.5.2 GFCI-Protected Receptacle Tests

The Contractor shall test each GFCI-protected receptacle to insure proper operation as follows:

a. Verify receptacle has been installed per manufacturer's instructions, terminal leads are securely wired, and outlet box interior and receptacle are clean.

b. Use approved GFI tester to perform the following tests:

- (1) Check for proper hot, neutral, and ground connections.
- (2) Insert 2 mA leakage; GFI shall not trip within 10 seconds.
- (3) Insert 3 mA leakage; GFI shall not trip within 10 seconds.
- (4) Insert over 5 mA leakage (or "GFI trip test"); GFI shall trip within 7 seconds.

3.5.3 Operations Tests

When Contracting Officer directs, manually operated devices shall be demonstrated to operate at least five times consecutively and successfully. The Contractor shall take care to avoid short cycle repetition of tests in which motors are started, observing the equipment manufacturer's recommended number of motor starts per hour to avoid motor overheating. All test readings shall be recorded and tabulated by the Contractor, in triplicate, in individual test reports. All test reports shall be certified by the Contractor and submitted to the Contracting Officer for approval.

3.5.4 Correction of Defects

Any equipment in which, by observation or by the results of the inspections, test indications, or test readings, are found to not to meet or exceed manufacturer shall be corrected, reinspected, and retested by the Contractor until the tests results meet manufacturer recommendations.

-- End of Section --

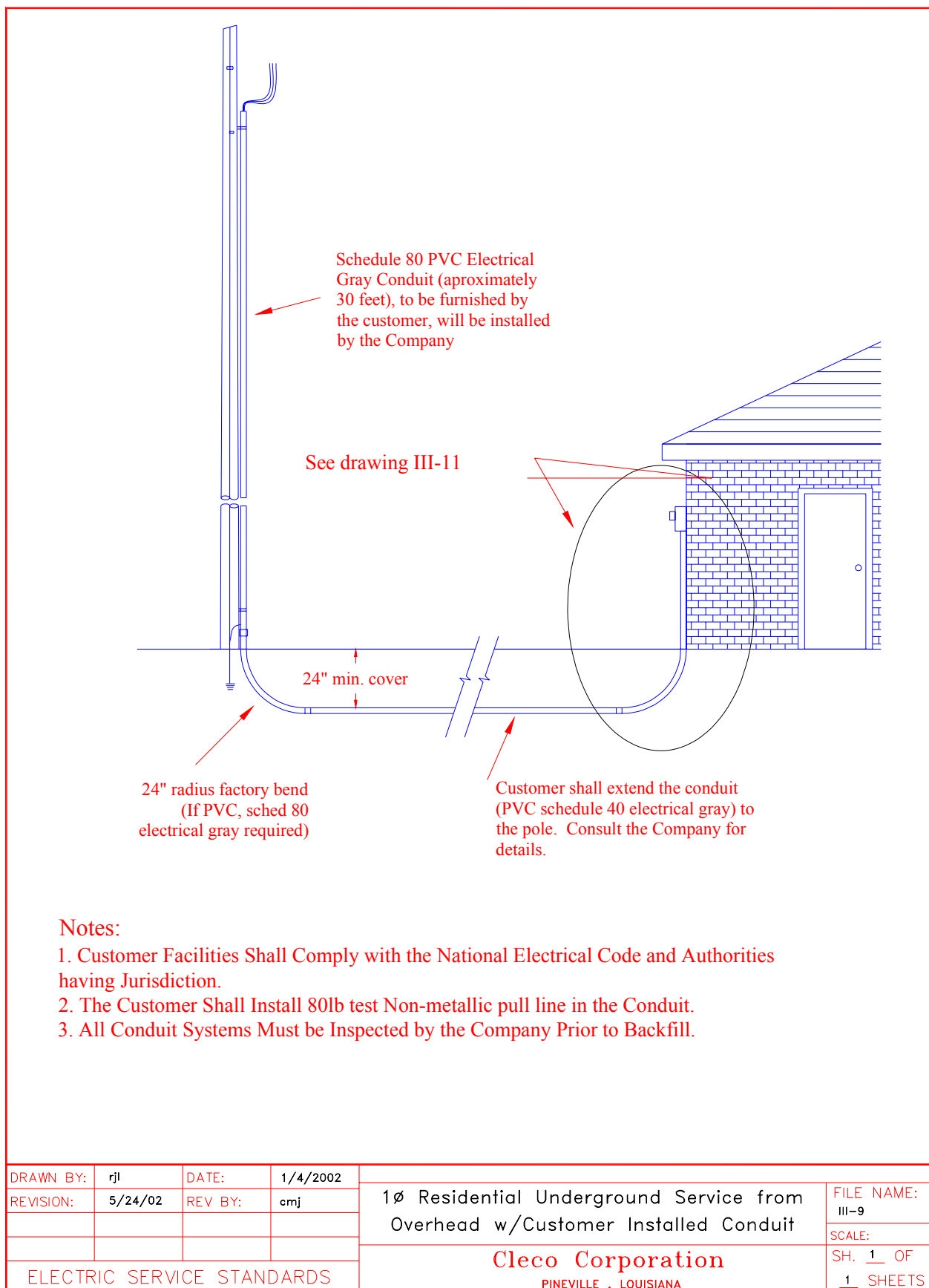


Fig. III-9 Single Phase Residential Underground Service from Overhead

ELECTRIC SERVICE STANDARDS

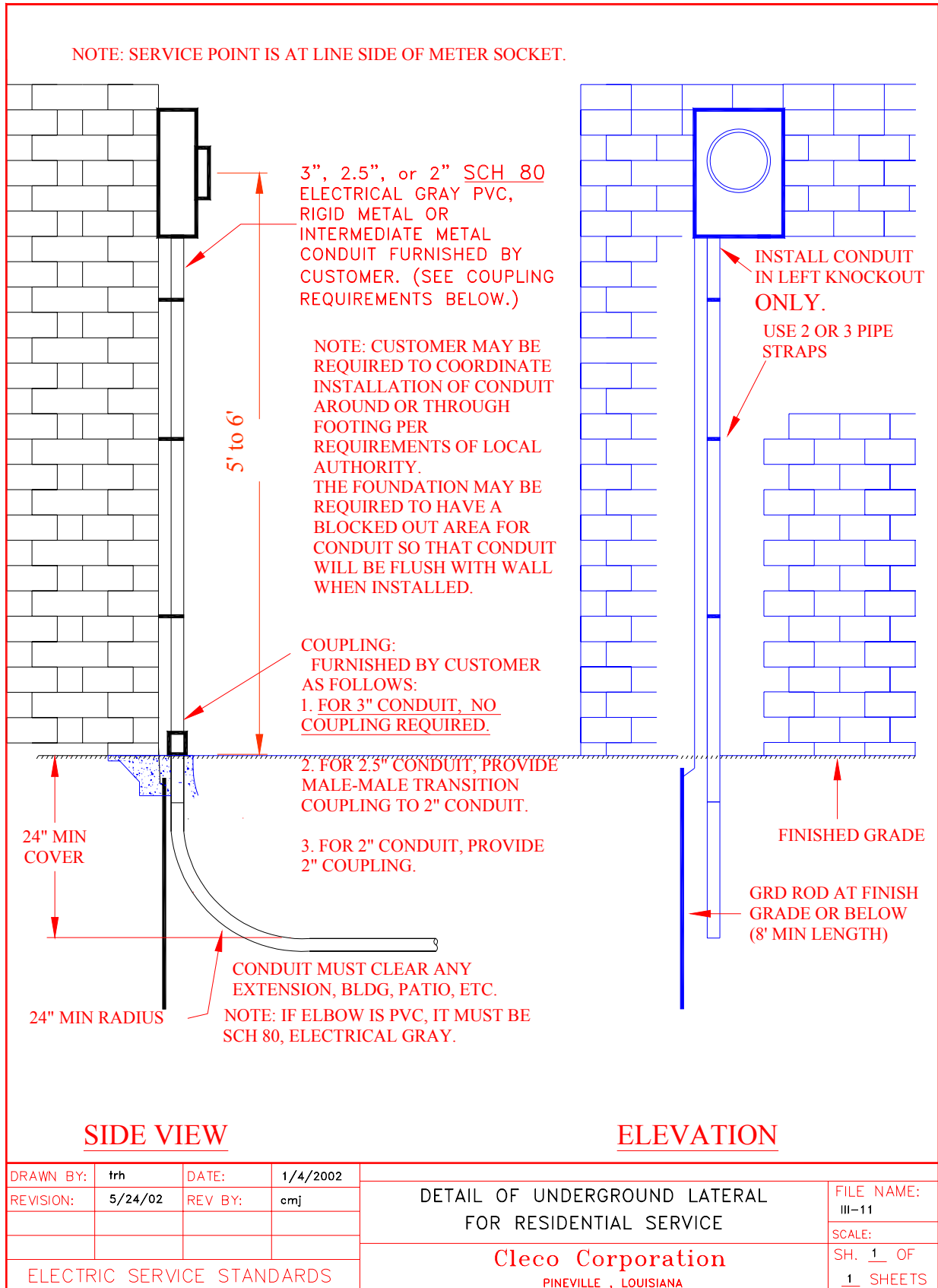


Fig. III-11 Detail of UG Lateral for Residential Service

8. CUSTOMER'S INSTALLATION AND SERVICE EQUIPMENT

8.1 General:

Information regarding availability and characteristics of service, location of service entrance, and point of delivery must be determined by consultations with Cleco when planning new installations, changes, remodeling, or for increased electrical load. An appointment with a Cleco Representative can be obtained by calling, toll-free, 1-800-622-6537.

8.1.1 Service Entrance:

The metering equipment is usually installed on the Customer's premises as part of the service entrance equipment and provisions must be made for it in the Customer's installation. The metering installation shall be at a location satisfactory to the Company (see appendix III or appendix IV). The Customer's service entrance installation shall consist of the meter socket, service entrance conductors, conduits, and service equipment. The meter, Current Transformer (CT) panel, and (CT) meter enclosure, (when needed) shall be furnished by, and remain the property of, the Company.

8.1.2 Meter Socket Installation: The Customer is responsible for providing a meter socket conforming to the following requirements.

1. Meter sockets shall be visibly and permanently marked with the manufacturer's name and catalog number.
2. On the inside of the box, a permanent sticker shall be affixed listing the electrical rating and acceptable conductor sizes.
3. All meter sockets must meet current standards of ANSI C12.7, UL 414, and NEC.
4. All sockets shall have appropriate label or labels certifying compliance of all parts with UL standards.
5. All meter sockets must be able to be tamper-sealed and in serviceable condition.
6. All sockets except residential single phase equal to or less than 200 Amps must have a manual mechanical gang operated bypass switch.
7. The lugs in 320 Amp meter sockets must accept up to 600 MCM conductor for a single wire connector, or 350 MCM for a dual wire connector.
8. For 5 terminal meter sockets, the 5th terminal must be physically secured to the meter socket. It may be relocatable but must be securely attached to the socket in the proposed operating position.
9. In accordance with all applicable codes, a socket must be properly installed and used in the application for which it is designed. Overhead sockets are required in overhead installations and underground sockets, which must be side-wire design, are required in underground installations.
10. Meter socket must be large enough to accommodate conductor size. Customer must properly seal all unused openings on the meter socket assembly.
11. All sockets shall be ringless, NEMA type 3R.

8.2 Inspection and Approvals:

The Customer's service installation shall be in accordance with NEC and/or local codes. The Company does not inspect premise wiring, except for protection of the Company's service and equipment. The Company shall be under no obligation whatsoever to inspect the Customer's installation and equipment. Where local wiring ordinances are in effect requiring inspection and approval of the Customer's wiring by local inspection authorities, the inspection shall be completed and certificate of approval secured before the Company renders service. The Company reserves the right not to connect any new service, and the right to disconnect an existing service should the Customer's wiring or equipment be deemed unsafe or does not comply with these Standards. When an existing meter installation is disconnected, this installation shall comply with current NEC standards prior to reconnection.

8.3 Location of Meters:

Meters shall be located in an accessible area that is relatively free from the threat of mechanical injury to the meter. Because commercial and industrial installations typically vary in each case, it is recommended that the

ELECTRIC SERVICE STANDARDS

Customer consult the Company before final plans are completed. In no case shall the Company allow meters to be placed inside a building or in any sort of enclosed structure.

8.3.1 Meter Mounting Height:

To facilitate reading, resetting, and servicing, the preferred mounting height of a single meter should be 5 feet, 6 inches above finished grade to the center of the meter, but shall not be more than 6 feet or less than 5 feet. Where two meters are mounted vertically on a wall as a gang installation at one location, the upper meter shall be mounted 6 feet to center above finished grade. The lower meter shall be mounted so as to allow 3 inches clearance between meter sockets. Where more than two meters are to be installed as a gang installation, they shall be mounted in horizontal rows. Individually metered apartment complexes, mobile home parks, and marinas may have meters installed in manufactured combination meter socket and switch gear assemblies. Each meter socket shall be permanently marked to indicate the apartment number, boat slip, or lot number. Such assemblies shall not have more than six rows of meters. When assemblies are mounted on the exterior walls of a building, the center of the highest meter shall not be more than 6 feet above finished grade and the center of the lowest meter shall not be less than 34 inches above finished grade. The Company shall not connect any Customer until these standards have been complied with.

8.3.2 Meters on Company Poles:

The Company shall not allow the installation of meter sockets and/or metering equipment on any Company pole, except for those used in conjunction with primary voltage metering installations and Joint Use applications.

8.4 Number and Size of Service Conductors:

The number and size of service entrance conductors are determined by the class and type of service offered by the Company and the class and type requested by the Customer, or his duly authorized designee, elects to receive. The service entrance conductors and equipment for single family dwellings shall have a minimum capacity of 100 amperes. (The Company recommends a minimum service capacity of 150 amperes for residences). Service entrance conductors and equipment less than 100 amperes shall be limited to special small load applications such as signs, traffic and signal lights, telephone booths, cable television amplifiers, temporary service, etc.

8.4.1 Meter Sockets as Raceways:

Meter sockets, CT cabinets, or Metering enclosures shall not be used as junction boxes, or raceways.

8.4.2 No more than one wire per lug screw shall be allowed on any connection.

8.5 Grounding of Service Entrances:

The neutral conductor and metallic parts of the service entrance including meter sockets, all meter enclosures, instrument transformer enclosures, or mounting brackets shall be adequately grounded according to the National Electrical Code, and/or any other governing bodies. For reference see Tables 8-1 and 8-2. The conductor to be grounded shall be as follows:

- (a) The identified Neutral conductor on single-phase, 3-wire services.
- (b) The identified Neutral conductor on multi-phase, 4-wire, Wye services.
- (c) The identified Neutral conductor on multi-phase, 4-wire, Delta services.

The grounded conductor shall be connected via grounding conductor to a grounding electrode. Conduits, metal enclosures, and metallic covering on the wiring system shall be bonded to the above ground connection. In no case shall gas or water pipe be used as a grounding electrode for electrical services.

ELECTRIC SERVICE STANDARDS

8.9 Service Entrance Masts:

Where the height of the building makes it impractical to attach the service drop at a point to provide for necessary clearances above ground, a service mast or other approved extension shall be furnished and installed by the Customer to permit the point of attachment to be located at a proper height above ground. (See Appendix II, Drawings II-2, II-3, II-4, II-5, II-6, and II-7) In general, service masts or other types of extensions shall conform to the following specifications:

- (a) Must be able to withstand a minimum load of 500 pounds in any horizontal direction from the point of attachment of the service drop.
- (b) Shall be constructed of rigid metallic conduit or IMC, the minimum size shall be two inches I.D.
- (c) The unsupported height of the service mast or "extension" shall not be more than:
 - 1. Thirty inches for 2" rigid conduit.
 - 2. Thirty-six inches for 2 1/2" conduit.

Other types of extensions designed to conform to (a) above may also be used after being approved by the Company.

No cable or telephone attachments are allowed on service masts.

8.9.2 When rigid conduit extensions are provided, the Company will furnish and install a suitable bracket to which the service drop will be attached. When the extension is constructed of other material, consult the Company for proper installation.

8.9.3 Metallic conduits or brackets used as a "service mast" or "extension" must be electrically bonded and grounded to the ground wire terminal in the meter socket enclosure.

8.9.4 The Company reserves the right to refuse to attach its service drop to any "service mast" or "extension" considered to be a hazard to public safety.

8.9.5 The Company assumes no responsibility for any failure of Customer- owned service mast or extension.

8.10 Service to Mobile Homes/Mobile Home Parks/Boat Slips/Marinas:

Cleco will furnish meters and service drops / service laterals. The meter socket and meter loops will be furnished and installed by the Customer. The Customer shall install his service pole or meter pedestal in accordance with the Company's specifications. (See Appendix III)

8.11 Service Entrance from Underground Source:

The service entrance equipment shall be installed in accordance with the provisions of the National Electrical Code. The meter enclosure shall be securely fastened to the exterior wall with a preferred installed height at center of 5 feet-6 inches, but shall not be more than 6 feet, or less than 5 feet. The premise wiring shall commence at the line side lugs of the meter socket or junction box. The customer will be responsible for supplying and installing the conduit riser to the meter enclosure. This riser shall be of PVC (schedule 80 minimum), or rigid metallic, fastened to the wall at 2'-6" intervals. The customer shall also be responsible for furnishing and installing a ground wire, ground wire conduit, and grounding electrode. For additional details, please see Appendix III, Drawings III-9, III-10, III-11. (Note: For metallic conduits the customer must also furnish and install a bonding clamp and jumper to the grounding electrode.) For service greater than 400 A see Appendix IV.

8.12 Disconnecting Means for Service Less than 600 Volts:

The Customer shall provide each set of service entrance conductors with a means of disconnecting all energized conductors from the source of supply. The disconnecting means may consist of not more than six load break